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SEQUENCE LISTING

<110> OKUNO, KAZUAKI
YABUTA, MASAYUKI

<120> POLYPEPTIDE CLEAVAGE METHOD USING OMPT PROTEASE VARIANT

<130> 47259.5001/00US

<140> 10/573,821

<141> 2006-03-28

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<151> 2004-09-29

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<160> 38

<170> PatentIn Ver. 3.3

<210> 1

<211> 184

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
protein sequence

<400> 1

Met	Thr	Met	Ile	Thr	Asp	Ser	Leu	Ala	Val	Val	Leu	Gln	Arg	Lys	Asp
1				5					10					15	

Trp	Glu	Asn	Pro	Gly	Val	Thr	Gln	Leu	Asn	Arg	Leu	Ala	Ala	His	Pro
		20					25						30		

Pro	Phe	Ala	Ser	Trp	Arg	Asn	Ser	Asp	Asp	Ala	Arg	Thr	Asp	Arg	Pro
	35					40						45			

Ser	Gln	Gln	Leu	Arg	Ser	Leu	Asn	Gly	Glu	Trp	Arg	Phe	Ala	Trp	Phe
	50					55					60				

Pro	Ala	Pro	Glu	Ala	Val	Pro	Glu	Ser	Leu	Leu	Asp	Leu	Pro	Glu	Ala
	65				70					75				80	

Asp	Thr	Val	Val	Val	Pro	Asp	Ser	Ser	Asn	Trp	Gln	Met	His	Gly	Tyr
			85						90					95	

Asp	Ala	Pro	Ile	Tyr	Thr	Asn	Val	Thr	Tyr	Pro	Ile	Thr	Val	Asn	Pro
		100						105					110		

Pro	Phe	Val	Pro	Thr	Glu	Pro	His	His	His	His	Pro	Gly	Gly	Arg	Gln
	115						120					125			

Met	His	Gly	Tyr	Asp	Ala	Glu	Leu	Arg	Leu	Tyr	Arg	Arg	His	His	Gly
	130					135					140				

Ser Gly Ser Pro Tyr Arg His Pro Arg His Ala Glu Gly Thr Phe Thr
 145 150 155 160

Ser Asp Val Ser Ser Tyr Leu Glu Gly Gln Ala Ala Lys Glu Phe Ile
 165 170 175

Ala Trp Leu Val Lys Gly Arg Gly
 180

<210> 2

<211> 184

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 protein sequence

<400> 2

Met Thr Met Ile Thr Asp Ser Leu Ala Val Val Leu Gln Arg Lys Asp
 1 5 10 15

Trp Glu Asn Pro Gly Val Thr Gln Leu Asn Arg Leu Ala Ala His Pro
 20 25 30

Pro Phe Ala Ser Trp Arg Asn Ser Asp Asp Ala Arg Thr Asp Arg Pro
 35 40 45

Ser Gln Gln Leu Arg Ser Leu Asn Gly Glu Trp Arg Phe Ala Trp Phe
 50 55 60

Pro Ala Pro Glu Ala Val Pro Glu Ser Leu Leu Asp Leu Pro Glu Ala
 65 70 75 80

Asp Thr Val Val Val Pro Asp Ser Ser Asn Trp Gln Met His Gly Tyr
 85 90 95

Asp Ala Pro Ile Tyr Thr Asn Val Thr Tyr Pro Ile Thr Val Asn Pro
 100 105 110

Pro Phe Val Pro Thr Glu Pro His His His His Pro Gly Gly Arg Gln
 115 120 125

Met His Ala Ala Ala Ala Ala Ala Ala Ala Arg Arg Ala Ala Ala
 130 135 140

Ala Gly Ser Pro Tyr Arg His Pro Arg His Ala Glu Gly Thr Phe Thr
 145 150 155 160

Ser Asp Val Ser Ser Tyr Leu Glu Gly Gln Ala Ala Lys Glu Phe Ile
 165 170 175

Ala Trp Leu Val Lys Gly Arg Gly
 180

<210> 3
 <211> 184
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 protein sequence

<400> 3
 Met Thr Met Ile Thr Asp Ser Leu Ala Val Val Leu Gln Arg Lys Asp
 1 5 10 15
 Trp Glu Asn Pro Gly Val Thr Gln Leu Asn Arg Leu Ala Ala His Pro
 20 25 30
 Pro Phe Ala Ser Trp Arg Asn Ser Asp Asp Ala Arg Thr Asp Arg Pro
 35 40 45
 Ser Gln Gln Leu Arg Ser Leu Asn Gly Glu Trp Arg Phe Ala Trp Phe
 50 55 60
 Pro Ala Pro Glu Ala Val Pro Glu Ser Leu Leu Asp Leu Pro Glu Ala
 65 70 75 80
 Asp Thr Val Val Val Pro Asp Ser Ser Asn Trp Gln Met His Gly Tyr
 85 90 95
 Asp Ala Pro Ile Tyr Thr Asn Val Thr Tyr Pro Ile Thr Val Asn Pro
 100 105 110
 Pro Phe Val Pro Thr Glu Pro His His His His Pro Gly Gly Arg Gln
 115 120 125
 Met His Ala Ala Ala Ala Ala Ala Ala Ala Arg Arg Ala Arg Ala
 130 135 140
 Ala Gly Ser Pro Tyr Arg His Pro Arg His Ala Glu Gly Thr Phe Thr
 145 150 155 160
 Ser Asp Val Ser Ser Tyr Leu Glu Gly Gln Ala Ala Lys Glu Phe Ile
 165 170 175
 Ala Trp Leu Val Lys Gly Arg Gly
 180

<210> 4
 <211> 184
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 protein sequence

<400> 4

Met Thr Met Ile Thr Asp Ser Leu Ala Val Val Leu Gln Arg Lys Asp
 1 5 10 15

Trp Glu Asn Pro Gly Val Thr Gln Leu Asn Arg Leu Ala Ala His Pro
 20 25 30

Pro Phe Ala Ser Trp Arg Asn Ser Asp Asp Ala Arg Thr Asp Arg Pro
 35 40 45

Ser Gln Gln Leu Arg Ser Leu Asn Gly Glu Trp Arg Phe Ala Trp Phe
 50 55 60

Pro Ala Pro Glu Ala Val Pro Glu Ser Leu Leu Asp Leu Pro Glu Ala
 65 70 75 80

Asp Thr Val Val Val Pro Asp Ser Ser Asn Trp Gln Met His Gly Tyr
 85 90 95

Asp Ala Pro Ile Tyr Thr Asn Val Thr Tyr Pro Ile Thr Val Asn Pro
 100 105 110

Pro Phe Val Pro Thr Glu Pro His His His His Pro Gly Gly Arg Gln
 115 120 125

Met His Ala Ala Ala Ala Ala Ala Ala Ala Arg Arg Arg Ala Arg Ala
 130 135 140

Ala Gly Ser Pro Tyr Arg His Pro Arg His Ala Glu Gly Thr Phe Thr
 145 150 155 160

Ser Asp Val Ser Ser Tyr Leu Glu Gly Gln Ala Ala Lys Glu Phe Ile
 165 170 175

Ala Trp Leu Val Lys Gly Arg Gly
 180

<210> 5

<211> 162

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 protein sequence

<400> 5

Met Thr Met Ile Thr Asp Ser Leu Ala Val Val Leu Gln Arg Lys Asp
 1 5 10 15

Trp Glu Asn Pro Gly Val Thr Gln Leu Asn Arg Leu Ala Ala His Pro
 20 25 30

Pro Phe Ala Ser Trp Arg Asn Ser Asp Asp Ala Arg Thr Asp Arg Pro
 35 40 45

Ser Gln Gln Leu Arg Ser Leu Asn Gly Glu Trp Arg Phe Ala Trp Phe
 50 55 60
 Pro Ala Pro Glu Ala Val Pro Glu Ser Leu Leu Asp Leu Pro Glu Ala
 65 70 75 80
 Asp Thr Val Val Val Pro Asp Ser Ser Asn Trp Gln Met His Gly Tyr
 85 90 95
 Asp Ala Pro Ile Tyr Thr Asn Val Thr Tyr Pro Ile Thr Val Asn Pro
 100 105 110
 Pro Phe Val Pro Thr Glu Pro His His His His Pro Gly Gly Arg Gln
 115 120 125
 Met His Gly Tyr Asp Ala Glu Leu Arg Leu Tyr Arg Phe Val Pro Ile
 130 135 140
 Phe Thr Tyr Gly Glu Leu Gln Arg Met Gln Glu Lys Glu Arg Asn Lys
 145 150 155 160

Gly Gln

<210> 6

<211> 165

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
protein sequence

<400> 6

Met Thr Met Ile Thr Asp Ser Leu Ala Val Val Leu Gln Arg Lys Asp
 1 5 10 15
 Trp Glu Asn Pro Gly Val Thr Gln Leu Asn Arg Leu Ala Ala His Pro
 20 25 30
 Pro Phe Ala Ser Trp Arg Asn Ser Asp Asp Ala Arg Thr Asp Arg Pro
 35 40 45
 Ser Gln Gln Leu Arg Ser Leu Asn Gly Glu Trp Arg Phe Ala Trp Phe
 50 55 60
 Pro Ala Pro Glu Ala Val Pro Glu Ser Leu Leu Asp Leu Pro Glu Ala
 65 70 75 80
 Asp Thr Val Val Val Pro Asp Ser Ser Asn Trp Gln Met His Gly Tyr
 85 90 95
 Asp Ala Pro Ile Tyr Thr Asn Val Thr Tyr Pro Ile Thr Val Asn Pro
 100 105 110
 Pro Phe Val Pro Thr Glu Pro His His His His Pro Gly Gly Arg Gln
 115 120 125

Met His Ala Ala Ala Ala Ala Ala Ala Ala Arg Arg Arg Ala Arg Phe
 130 135 140

Val Pro Ile Phe Thr Tyr Gly Glu Leu Gln Arg Met Gln Glu Lys Glu
 145 150 155 160

Arg Asn Lys Gly Gln
 165

<210> 7

<211> 167

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 protein sequence

<400> 7

Met Thr Met Ile Thr Asp Ser Leu Ala Val Val Leu Gln Arg Lys Asp
 1 5 10 15

Trp Glu Asn Pro Gly Val Thr Gln Leu Asn Arg Leu Ala Ala His Pro
 20 25 30

Pro Phe Ala Ser Trp Arg Asn Ser Asp Asp Ala Arg Thr Asp Arg Pro
 35 40 45

Ser Gln Gln Leu Arg Ser Leu Asn Gly Glu Trp Arg Phe Ala Trp Phe
 50 55 60

Pro Ala Pro Glu Ala Val Pro Glu Ser Leu Leu Asp Leu Pro Glu Ala
 65 70 75 80

Asp Thr Val Val Val Pro Asp Ser Ser Asn Trp Gln Met His Gly Tyr
 85 90 95

Asp Ala Pro Ile Tyr Thr Asn Val Thr Tyr Pro Ile Thr Val Asn Pro
 100 105 110

Pro Phe Val Pro Thr Glu Pro His His His His Pro Gly Gly Arg Gln
 115 120 125

Met His Ala Ala Ala Ala Ala Ala Ala Ala Arg Arg Arg Ala Arg Ser
 130 135 140

Tyr Ser Met Glu His Phe Arg Trp Gly Lys Pro Val Gly Lys Lys Arg
 145 150 155 160

Arg Pro Val Lys Val Tyr Pro
 165

<210> 8

<211> 176

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
protein sequence

<400> 8

Met	Thr	Met	Ile	Thr	Asp	Ser	Leu	Ala	Val	Val	Leu	Gln	Arg	Lys	Asp
1				5					10					15	
Trp	Glu	Asn	Pro	Gly	Val	Thr	Gln	Leu	Asn	Arg	Leu	Ala	Ala	His	Pro
			20					25					30		
Pro	Phe	Ala	Ser	Trp	Arg	Asn	Ser	Asp	Asp	Ala	Arg	Thr	Asp	Arg	Pro
		35				40						45			
Ser	Gln	Gln	Leu	Arg	Ser	Leu	Asn	Gly	Glu	Trp	Arg	Phe	Ala	Trp	Phe
	50					55					60				
Pro	Ala	Pro	Glu	Ala	Val	Pro	Glu	Ser	Leu	Leu	Asp	Leu	Pro	Glu	Ala
	65				70					75					80
Asp	Thr	Val	Val	Val	Pro	Asp	Ser	Ser	Asn	Trp	Gln	Met	His	Gly	Tyr
				85					90					95	
Asp	Ala	Pro	Ile	Tyr	Thr	Asn	Val	Thr	Tyr	Pro	Ile	Thr	Val	Asn	Pro
			100					105					110		
Pro	Phe	Val	Pro	Thr	Glu	Pro	His	His	His	His	Pro	Gly	Gly	Arg	Gln
		115					120					125			
Met	His	Ala	Ala	Ala	Ala	Ala	Ala	Ala	Ala	Arg	Arg	Arg	Ala	Arg	Cys
	130					135					140				
Gly	Asn	Leu	Ser	Thr	Cys	Met	Leu	Gly	Thr	Tyr	Thr	Gln	Asp	Phe	Asn
145					150					155					160
Lys	Phe	His	Thr	Phe	Pro	Gln	Thr	Ala	Ile	Gly	Val	Gly	Ala	Pro	Gly
				165					170					175	

<210> 9

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
peptide

<400> 9

Leu	Tyr	Lys	Arg	His
1				5

<210> 10
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 10
Ala Arg Arg Ala
1

<210> 11
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 11
Arg Arg Arg Ala Arg
1 5

<210> 12
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 12
Asp Ala Arg Arg Arg Ala Arg
1 5

<210> 13
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 13
Arg Arg Ala Arg
1

<210> 14
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 14
Ala Ala Arg Arg Ala Arg Ala Ala
1 5

<210> 15
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 15
Arg Arg Arg Ala Arg Ala
1 5

<210> 16
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 16
Asp Ala Arg Arg Arg Ala Arg Ala
1 5

<210> 17
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 17
Tyr Gly Gly Phe Leu Arg
1 5

<210> 18
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
protein sequence

<400> 18
Ala Ala Ala Ala Ala Ala Ala Arg Arg Arg Ala Ala Ala Ala
1 5 10 15

<210> 19
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
protein sequence

<400> 19
Ala Ala Ala Ala Ala Ala Ala Arg Ala Arg Arg Ala Ala Ala Ala
1 5 10 15

<210> 20
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
protein sequence

<400> 20
Ala Ala Ala Ala Ala Ala Arg Ala Ala Arg Arg Ala Ala Ala Ala
1 5 10 15

<210> 21
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
protein sequence

<400> 21
Ala Ala Ala Ala Arg Ala Ala Ala Arg Arg Ala Ala Ala Ala
1 5 10 15

<210> 22
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 protein sequence

<400> 22
 Ala Ala Ala Arg Ala Ala Ala Ala Arg Arg Ala Ala Ala Ala
 1 5 10 15

<210> 23
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 protein sequence

<400> 23
 Ala Ala Ala Arg Ala Ala Ala Ala Arg Arg Ala Ala Ala Ala
 1 5 10 15

<210> 24
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 protein sequence

<400> 24
 Ala Ala Arg Ala Ala Ala Ala Ala Arg Arg Ala Ala Ala Ala
 1 5 10 15

<210> 25
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 protein sequence

<400> 25
 Ala Arg Ala Ala Ala Ala Ala Ala Arg Arg Ala Ala Ala Ala
 1 5 10 15

<210> 26
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 protein sequence

<400> 26
 Arg Ala Ala Ala Ala Ala Ala Ala Arg Arg Ala Ala Ala Ala
 1 5 10 15

<210> 27
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 protein sequence

<400> 27
 Ala Ala Ala Ala Ala Ala Ala Ala Arg Arg Arg Ala Ala Ala
 1 5 10 15

<210> 28
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 protein sequence

<400> 28
 Ala Ala Ala Ala Ala Ala Ala Ala Arg Arg Ala Ala Arg Ala
 1 5 10 15

<210> 29
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 protein sequence

<400> 29
 Ala Ala Ala Ala Ala Ala Ala Arg Arg Ala Ala Ala Arg
 1 5 10 15

<210> 30
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 protein sequence

<400> 30
 Ala Ala Ala Ala Ala Ala Ala Ala Ala Arg Ala Arg Ala Ala
 1 5 10 15

<210> 31
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 protein sequence

<400> 31
 Ala Ala Ala Ala Ala Ala Ala Ala Ala Arg Ala Ala Arg Ala Ala
 1 5 10 15

<210> 32
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 protein sequence

<400> 32
 Ala Ala Ala Ala Ala Ala Arg Arg Arg Arg Ala Arg Ala Ala
 1 5 10 15

<210> 33
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 protein sequence

<400> 33
 Ala Ala Ala Ala Ala Ala Ala Arg Arg Arg Arg Ala Ala
 1 5 10 15

<210> 34
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 protein sequence

<400> 34
 Ala Ala Ala Ala Ala Ala Asp Arg Arg Arg Ala Arg Ala Ala
 1 5 10 15

<210> 35
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 protein sequence

<400> 35
 Ala Ala Ala Ala Ala Ala Asp Ala Arg Arg Arg Ala Arg Ala Ala
 1 5 10 15

<210> 36
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 protein sequence

<400> 36
 Ala Ala Ala Ala Ala Asp Ala Ala Arg Arg Arg Ala Arg Ala Ala
 1 5 10 15

<210> 37
 <211> 37
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 protein sequence

<400> 37
 Met His Ala Ala Ala Ala Ala Ala Asp Arg Arg Arg Ala Arg Phe
 1 5 10 15
 Val Pro Ile Phe Thr Tyr Gly Glu Leu Gln Arg Met Gln Glu Lys Glu
 20 25 30

Arg Asn Lys Gly Gln
35

<210> 38

<211> 37

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
protein sequence

<400> 38

Met His Ala Ala Ala Ala Ala Asp Ala Arg Arg Arg Ala Arg Phe
1 5 10 15

Val Pro Ile Phe Thr Tyr Gly Glu Leu Gln Arg Met Gln Glu Lys Glu
20 25 30

Arg Asn Lys Gly Gln
35